

IMPROVEMENTS IN CONVENIENCE ROLLS

This invention relates to convenience rolls. The term "convenience roll" used herein is intended to cover products of an essentially disposable nature intended primarily, though not necessarily exclusively, for a cleaning or
5 hygienic function, whether made of paper or of other materials, whether absorbent or not, and whether normally presented in a dry, moist or wet condition, and would therefore include, for example, tissues, kitchen rolls, lavatory rolls, hand towels, face towels, cleaning wipes and baby wipes. The
10 term is also intended to cover products such as disposable bibs and notepads.

The invention provides a convenience roll as defined herein in the form of an elongate web of material comprising a multiplicity of individual portions integrally connected together in series, wherein each individual portion is
15 shaped so as to have an area that is less than the product of its overall width across the web multiplied by its length along the web, and wherein neighbouring individual portions are connected together by a frangible zone of material whose width across the web is small relative to the overall width of the web whereby to act as a controlled breaking point for when an
20 individual portion is to be separated from its neighbour on dispensing.

By way of example, embodiments of the invention will now be described with reference to the accompanying drawings, in which,

25 Figure 1 illustrates a form of convenience roll in accordance with the invention,

Figures 2 and 3 illustrate one manner of folding of the web of Figure 1 into a stack,

Figure 4 illustrates one way of forming four of the webs shown in Figure 1 at once,

5 Figures 5 and 6 illustrate alternative forms of convenience roll according to the invention,

Figure 7 illustrates a form of dispenser for a web similar to that shown in Figure 4,

10 Figures 8 and 9 illustrate an alternative manner of folding of the web shown in Figure 1 and a dispenser for the stack,

Figures 10, 11 and 12 show yet another alternative manner of folding of the web shown in Figure 1 and a dispenser for the stack,

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Figures 13 to 18 illustrate various forms of dispenser, and

Figure 19 illustrates an alternative form of convenience roll.

20 The convenience roll in Figure 1 is formed in a continuous length of material or web 10. The material itself can be of any suitable composition, but may typically be paper-based and consist of one or more plies. As will be seen in Figure 1, the web 10 is shaped so as to comprise a multiplicity of generally circular-shaped individual portions 11 joined together in series. Each
25 individual portion 11 is connected to each of its neighbouring portions immediately behind and in front by a thin strip of material 12. These strips of material 12 are designed to be of significantly reduced width compared with the overall width across the web, so as to be frangible. The frangible strips 12 thus act as controlled breaking points for when each individual portion 11 is
30 to be separated from its neighbour on dispensing.

Here, the width of the frangible strips 12 is roughly one sixth of the overall width across the web 10. Of course, this may be varied depending on factors such as the particular material used. Also, the individual portions may be connected together by two or more frangible strips which together form a frangible zone. It will be appreciated that the presence of the frangible strips obviates the need for any perforations across the web, the traditional method of assisting separation between successive individual portions in a conventional roll of paper towels.

10 It may be possible to produce the web in the particular shape shown in Figure 1 as it is actually being formed, eg whilst it is on the wire of a paper making machine. Alternatively, the shape may be achieved by a cutting operation on a normally-formed web. In that event, the trimmed wastage can be readily recycled and returned to the web forming process at the point of manufacture.

15 Figure 4 illustrates how four webs 10 can be formed at once, side by side across the web. It will also be seen in this illustration how a saving of around 20% in material can be made compared with a conventional rectangular roll.

20 It has been observed that it is typically only the central circular portion of a paper towel that is the effective working area, the corner regions of a traditional square or rectangular paper towel often remaining unused. By making a paper towel in a circular shape, therefore, best use is made of it with the minimum amount of material, and without compromising its effectiveness.

25 The shape is also aesthetically pleasing and cost effective, as well as being environmentally friendly.

It would be possible to store the web 10 seen in Figure 1 on a roll, to be dispensed in the same manner as a traditional kitchen roll, for example. Figure 7 illustrates a conveniently portable form of dispenser 70 for containing a convenience roll 71 which here has generally oval shaped individual portions

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72. As each individual portion 72 is pulled from the dispenser 70, it half pulls out the next individual portion before the frangible strip 73 breaks.

Alternatively, the web 10 may be folded and stacked. The simplest form of folding arrangement would involve laying each successive individual portion 11 over the previous one by a single fold of the frangible strip 12 that joins them together, ie along each fold line A in Figure 1. This would produce a stack of individual portions with a generally circular section. A stack 80 such as this is illustrated in Figure 8.

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Figure 9 shows a dispenser 90 suitable for containing the stack 80 shown in Figure 8, and it is in the form of a generally round case. The case could conveniently contain the stack in a moist or wet condition for use as wipes.

15 A more elaborate folding arrangement would involve additionally folding each individual portion 11 about its diameter extending across the web 10, ie along fold line B in Figure 1. This would produce a stack of individual portions with a generally semi-circular section.

20 A yet more sophisticated folding arrangement would involve folding each individual portion 11 along three diametrically extending fold lines. As will be seen in Figure 1, one of these is fold line B extending across the web. The other two, fold lines C and D, are each offset by approximately 45° to fold line B. Each individual portion 11 is folded downwardly about its fold line B and folded upwardly about its two other fold lines C and D, as seen in Figure 2. The result is that each individual portion 11 is folded into a flat, multi-layered configuration in the shape of a quarter circle. If this folding action is applied to each individual portion 11 in succession, the result is a stack of folded individual portions having a generally quadrant-shaped section, as seen in Figure 3.

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Figures 5 and 6 illustrate possible alternative profiles for the shape of the individual portions of the web. In Figure 5, the individual portions 11a of the web 10a have an oval shape, whilst in Figure 5 the individual portions 11b of the web 10b are diamond-shaped. In each case, the individual portions are joined integrally together in series by frangible strips 12a, 12b, as in the manner of the Figure 1 embodiment. If desired, the webs 10a, 10b shown in Figures 5 and 6 could be folded in ways similar to those discussed above in relation to the Figure 1 embodiment.

10 An alternative manner of folding of the web shown in Figure 1 is illustrated in Figure 10. Here, in addition to fold lines A, B, C and D shown in Figure 1, an additional fold line E is used, fold line E extending along the longitudinal axis of the web. The manner of folding involves firstly folding over each individual portion 11 about fold line B. The individual portion 11 is then folded alternately up and down about fold lines C, D and E in the manner of a fan, as seen in Figure 11. The thus fan-shaped folded individual portions are then stacked one upon the other, folding the frangible strips 12 about fold line A, to form a generally triangular shaped stack. Figure 12 illustrates a triangular shaped dispenser 120 with a top access opening 121 suitable for containing a stack folded in this way.

Depending on exactly how the web is shaped and folded, it will be suitable for dispensing in a number of other different ways. The dispenser 130 shown in Figure 13, for example, is itself quadrant-shaped in section and is therefore suitable for dispensing paper towels in the form of the stack 13 shown in Figure 3. The dispenser could be mounted or stand in a corner.

Figure 14 illustrates a free-standing form of dispenser 140 which is semi-circular in section, with two lidded compartments 141, 142 for containing two separate supplies of paper towels in the form of the stack 13 shown in Figure

3. This dispenser could conveniently be used to contain dry paper towels in one compartment and moist or wet ones in the other.

5 The Figure 15 dispenser 150 is circular in section, with four compartments for holding four separate supplies of paper towels each in the form of the stack 13 shown in Figure 3. This dispenser may be wall mounted and may usefully be combined with an integral soap-dispensing facility 151 fed from a reservoir 152 via a passage 153 down the central spine of the dispenser. The dispenser
10 may contain a single opening 154 for accessing the individual portions through its housing, with an indexing mechanism to bring the next successive compartment into register with the opening as each stack runs out.

15 The Figure 16 dispenser 160 is free standing, with two separate stacks of paper towels 13 being spring loaded towards a central access opening 161.

The Figure 17 dispenser 170 is in the form of a rotatable, part-spherical drum shaped to receive a stack of towels around its axis, for dispensing through a slot 171. This dispenser is suitable for containing supplies of paper towels in the form of the stack shown in Figure 3.

20 In the Figure 18 dispenser 180, a stack of paper towels is stored in a generally annular shaped housing, with the paper towels being biased towards an access opening 181 by means of a spring-loaded paddle 182.

25 In all of these dispensers, the idea of the design is to contain the stack in a way that presents the next individual portion to the user. When the user pulls an individual portion from the dispenser, this will cause the next successive individual portion to begin to be pulled from the dispenser, because the two are connected by the frangible strip. However, the frangible strip is designed
30 to break before the next individual portion has been fully pulled out, leaving enough of the portion exposed to be ready for the next user. Where the

individual portions are folded and dispensed from a stack, their particular manner of folding may assist in this process.

5 Figure 19 shows an alternative form of convenience roll, here a stack 190 of disposable bibs. Each individual portion 191 of the web is a disposable bib and as before, these are all connected together by a series of frangible strips. The individual portions 191 here have a central access hole 192 so that the bib can be put over a baby's head, as illustrated.

10 It will be appreciated that the techniques and forms described herein could be used to produce convenience rolls for many different purposes, not necessarily for cleaning or hygiene. For example, the convenience roll may be of ordinary paper and be in the form of a note pad. In that event, it might be possible to add a layer of adhesive to the frangible strips that separate each
15 individual portion which can be used for affixing the individual portion after it has been detached from the stack, in the manner of a conventional "post-it" note.